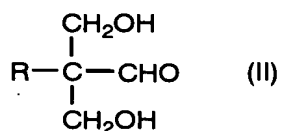
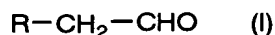


Claims

1. A process for producing an α,α -bis(hydroxymethyl)alkanal represented by Formula (II):



(wherein R represents an alkyl group, a cycloalkyl group, or an aryl group) which comprises reacting an aldehyde represented by Formula (I):



(wherein R has the same meaning as defined above) with formaldehyde in the presence of a basic catalyst and a phase-transfer catalyst.

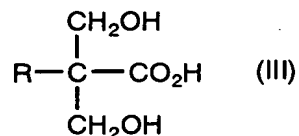
2. The process according to Claim 1, wherein the amount of formaldehyde used is in the range of 0.3 to 1.7 mol with respect to 1 mol of the aldehyde represented by Formula (I).

3. The process according to Claim 1 or 2, wherein the amount of the phase-transfer catalyst used is in the range of 0.0001 to 10 mol with respect to 1 mol of the basic catalyst.

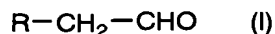
4. The process according to any one of Claims 1 to 3, wherein the phase-transfer catalyst is an onium salt, a crown ether, or a surfactant.

5. The process for producing an α,α -bis(hydroxymethyl)

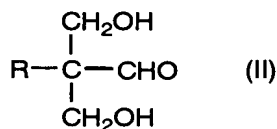
alkanoic acid represented by Formula (III):



(wherein R represents an alkyl group, a cycloalkyl group, or an aryl group) which comprises reacting an aldehyde represented by Formula (I):



(wherein R has the same meaning as defined above) with formaldehyde in the presence of a basic catalyst and a phase-transfer catalyst to obtain an α,α -bis(hydroxymethyl)alkanal represented by Formula(II):



(wherein R has the same meaning as defined above) and oxidizing the obtained α,α -bis(hydroxymethyl)alkanal.

6. The process for producing according to Claim 5, wherein the amount of formaldehyde used is in the range of 0.3 to 1.7 mol with respect to 1 mol of the aldehyde represented by Formula (I).

7. The process for producing according to Claim 5 or 6, wherein the amount of the phase-transfer catalyst used is in the range of 0.0001 to 10 mol with respect to 1 mol of the basic catalyst.

8. The process for producing according to any one of Claims 5 to 7, wherein the phase-transfer catalyst is an onium salt, a crown ether, or a surfactant.